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10/733,425	12/10/2003	Hideo Kawahara	1232-5229	2124

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EXAMINER	
KHAN, USMAN A	

ART UNIT	PAPER NUMBER
2622	

NOTIFICATION DATE	DELIVERY MODE
03/24/2008	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/733,425	KAWAHARA, HIDEO	
	Examiner	Art Unit	
	USMAN KHAN	2622	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07 January 2008 and 06 February 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-8* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1 and 3-8* is/are rejected.

7)☒ Claim(s) *2* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *10 December 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

Response to Arguments

Applicant's arguments filed on 01/07/2008 regarding claims 1 and 7 have been fully considered but they are not persuasive.

Please refer to the following office action, which clearly sets forth the reasons for non-persuasiveness.

In response to applicant's argument for claims 1 and 7:

Regarding **claims 1 and 7** Applicant argues that Morofuji does not teach or suggest "a compensation unit that compensates vibration in vibration compensation axes directions, the vibration compensation axes being two orthogonal axes that make an angle with said vibration detection axes due to deviation of alignment between said angular velocity detector and said compensation unit", as recited in amended claim 1. Applicant notes that amended claim 1 recites similar features to allowable claim 2. Independent claim 7 has been amended to recite similar features to amended claim 1.

However the examiner notes that it is clear from Morofuji; that in figures 8 and 9 and also from column 7 lines 40 *et seq.* and column 11 lines 20 *et seq.* that the VAP item 106 is used to compensate the angle of the input signal using the signal from items 1 and 1' i.e. angular velocity detection unit using the angle difference and compensation.

DETAILED ACTION

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 02/06/2008 has been entered.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 and 3 - 8 are rejected under 35 U.S.C. 102(b) as being anticipated by Morofuji (US patent No. 6,343,188).

Regarding **claim 1,** Morofuji teaches a vibration compensation apparatus (Abstract) comprising: an angular velocity detector that detects angular velocities in the vibration detection axes directions, the vibration detection axis being two orthogonal detection axes directions (figure 1, item 1 for yaw (i.e. x direction) and item 1' for pitch (i.e. y direction)), and outputs corresponding angular velocity signals (figure 1 items 1 and 1' outputting to items 2 and 2' i.e. HPF's); a compensation unit that compensates vibration in vibration compensation axes directions (figure 8 and also figure 9 item 106

in directions of item numbers 140 and 117), the vibration compensation axes being two orthogonal axes (figure 8 and also figure 9 item 106 in directions of item numbers 140 and 117; also figure 1, item 1 for yaw (i.e. x direction) and item 1' for pitch (i.e. y direction)) that make an angle with said vibration detection axes due to deviation of alignment between said angular velocity detector and said compensation unit (figures 8 and 9 and also from column 7 lines 40 *et seq.* and column 11 lines 20 *et seq.* that the VAP item 106 is used to compensate the angle of the input signal using the signal from items 1 and 1' i.e. angular velocity detection unit using the angle difference and compensation); and a conversion unit that converts the angular velocity signals expressed in the vibration detection axes directions obtained by said angular velocity detector **or** vibration compensation signals based on the angular velocity signals into angular velocity signals **or** vibration compensation signals expressed in the vibration compensation axes directions (figure 1 items 203 and 203', figure 3, abstract, and column 5 lines 17 *et seq.*; integration unit 203 integrates angular velocity signal and converts the angular velocity signal into an angular displacement signal to generate a vibration signal, a variable angle prism (VAP) also shown in figures 8 and 9 is driven on the basis of the vibration signal) equations for rotation transformation based on said angle (column 7 lines 57 – 67; figure 16 items s402 and s405; also it is inherent that the vibration correction operation of figure 16 and figure 3 also items 203 and 203' of figure 1 will use equations for correction), wherein said compensation unit compensates the vibration based on the angular velocity signals **or** vibration compensation signals converted by said conversion unit (figure 1 items 203 and 203', figure 3, abstract, and

column 5 lines 17 *et seq.*; integration unit 203 integrates angular velocity signal and converts the angular velocity signal into an angular displacement signal to generate a vibration signal, a variable angle prism (VAP) also shown in figures 8 and 9 is driven on the basis of the vibration signal).

Regarding **claim 3**, as mentioned above in the discussion of claim 1 Morofuji teaches all of the limitations of the parent claim. Additionally, Morofuji teaches that the said conversion unit has a conversion table storing angular velocity **or** vibration compensation signal values expressed in the vibration detection axes directions to be used in the conversion operation in accordance with angular velocity signals **or** vibration compensation signals expressed in the vibration compensation axes directions (column 11 lines 32 et seq. and in column 15 liens 33 *et seq.*; data table).

Regarding **claim 4**, as mentioned above in the discussion of claim 1 Morofuji teaches all of the limitations of the parent claim. Additionally, Morofuji teaches that the said compensation unit comprises an optical compensation unit (figure 1 items 30, 30', 5, and 5' incorporating the optical system i.e. optical compensation unit in figure 5; column 7 lines 40 et seq., column 11 lines 12 *et seq.*, column 13 lines 15 *et seq.*, and column 14 lines 66 *et seq.* the VAP i.e. compensation is optically used with other optical components and about the optical axis).

Regarding **claim 5,** Morofuji teaches an image sensing apparatus comprising: a photoelectric converter that senses an image by converting incident light into an electric signal (figure 5 item 104 i.e. CCD and column 8 lines 9 – 16, it is inherent that a CCD photoelectrically converts light into electrical signals and outputs them). The imaging system also comprises a vibration compensation apparatus (Abstract) comprising: an angular velocity detector that detects a plurality of angular velocities in two orthogonal detection axes directions (figure 1, item 1 for yaw (i.e. x direction) and item 1' for pitch (i.e. y direction)), and outputs corresponding angular velocity signals (figure 1 items 1 and 1' outputting to items 2 and 2' i.e. HPF's); a compensation unit that compensates vibration in a plurality of compensation axis directions (figure 8 and also figure 9 item 106 in directions of item numbers 140 and 117); and a conversion unit that converts the plurality of angular velocity signals obtained by said angular velocity detector **or** a plurality of vibration compensation signals based on the plurality of angular velocity signals into vibration compensation signals expressed in the coordinates of the compensation axes of said compensation unit (figure 1 items 203 and 203', figure 3, abstract, and column 5 lines 17 *et seq.*; integration unit 203 integrates angular velocity signal and converts the angular velocity signal into an angular displacement signal to generate a vibration signal, a variable angle prism (VAP) also shown in figures 8 and 9 is driven on the basis of the vibration signal), wherein said compensation unit compensates the vibration based on the vibration correction signals converted by said conversion unit (figure 1 items 203 and 203', figure 3, abstract, and column 5 lines 17 *et seq.*; integration unit 203 integrates angular velocity signal and converts the angular

velocity signal into an angular displacement signal to generate a vibration signal, a variable angle prism (VAP) also shown in figures 8 and 9 is driven on the basis of the vibration signal). Also, said compensation unit compensates vibration by controlling read out timing of the electric signal from said photoelectric converter (it is inherent that the readout of the CCD (figure 5 item 104 i.e. CCD and column 8 lines 9 – 16) i.e. photoelectric converter is controlled based on the timing and angle of the compensation unit to reduce vibration from the input signals).

Regarding **claim 6,** Morofuji teaches an image sensing apparatus comprising: a photoelectric converter that senses an image by converting incident light into an electric signal (figure 5 item 104 i.e. CCD and column 8 lines 9 – 16, it is inherent that a CCD photoelectrically converts light into electrical signals and outputs them). The imaging system also comprises a vibration compensation apparatus (Abstract) comprising: an angular velocity detector that detects a plurality of angular velocities in two orthogonal detection axes directions (figure 1, item 1 for yaw (i.e. x direction) and item 1' for pitch (i.e. y direction)), and outputs corresponding angular velocity signals (figure 1 items 1 and 1' outputting to items 2 and 2' i.e. HPF's); a compensation unit that compensates vibration in a plurality of compensation axis directions (figure 8 and also figure 9 item 106 in directions of item numbers 140 and 117); and a conversion unit that converts the plurality of angular velocity signals obtained by said angular velocity detector **or** a plurality of vibration compensation signals based on the plurality of angular velocity signals into vibration compensation signals expressed in the coordinates of the

compensation axes of said compensation unit (figure 1 items 203 and 203', figure 3, abstract, and column 5 lines 17 *et seq.*; integration unit 203 integrates angular velocity signal and converts the angular velocity signal into an angular displacement signal to generate a vibration signal, a variable angle prism (VAP) also shown in figures 8 and 9 is driven on the basis of the vibration signal), wherein said compensation unit compensates the vibration based on the vibration correction signals converted by said conversion unit (figure 1 items 203 and 203', figure 3, abstract, and column 5 lines 17 *et seq.*; integration unit 203 integrates angular velocity signal and converts the angular velocity signal into an angular displacement signal to generate a vibration signal, a variable angle prism (VAP) also shown in figures 8 and 9 is driven on the basis of the vibration signal). Also, said compensation unit compensates vibration by processing the electric signal from said photoelectric converter (it is inherent that the readout of the CCD (figure 5 item 104 i.e. CCD and column 8 lines 9 – 16) i.e. photoelectric converter is processed based on compensation unit to reduce vibration from the input signals).

Regarding **claim 7,** Morofuji teaches a vibration compensation method using an angular velocity detector which detects angular velocities in the vibration detection axes directions, the vibration detection axes being two orthogonal detection axes (figure 1, item 1 for yaw (i.e. x direction) and item 1' for pitch (i.e. y direction)), and outputs angular velocity signals (figure 1 items 1 and 1' outputting to items 2 and 2' i.e. HPF's), and a compensation unit which compensates vibration in vibration compensation axes directions (figure 8 and also figure 9 item 106 in directions of item numbers 140 and

117), the vibration compensation axes being orthogonal axes (figure 8 and also figure 9 item 106 in directions of item numbers 140 and 117; also figure 1, item 1 for yaw (i.e. x direction) and item 1' for pitch (i.e. y direction)) that make an angle with said vibration detection axes due to deviation of alignment between said angular velocity detector and said compensation unit (figures 8 and 9 and also from column 7 lines 40 *et seq.* and column 11 lines 20 *et seq.* that the VAP item 106 is used to compensate the angle of the input signal using the signal from items 1 and 1' i.e. angular velocity detection unit using the angle difference and compensation), comprising: converting the angular velocity signals expressed in the vibration axes directions obtained by said angular velocity detector **or** vibration compensation signals based on the angular velocity signals into angular velocity signals **or** vibration compensation signals expressed in the vibration compensation axes directions (figure 1 items 203 and 203', figure 3, abstract, and column 5 lines 17 *et seq.*; integration unit 203 integrates angular velocity signal and converts the angular velocity signal into an angular displacement signal to generate a vibration signal, a variable angle prism (VAP) also shown in figures 8 and 9 is driven on the basis of the vibration signal) using equations for rotation transformation based on said angle (column 7 lines 57 – 67; figure 16 items s402 and s405; also it is inherent that the vibration correction operation of figure 16 and figure 3 also items 203 and 203' of figure 1 will use equations for correction); and compensating the vibration by controlling the compensation unit based on the converted angular velocity signals **or** vibration compensation signals (figure 1 items 203 and 203', figure 3, abstract, and column 5 lines 17 *et seq.*; integration unit 203 integrates angular velocity signal and

converts the angular velocity signal into an angular displacement signal to generate a vibration signal, a variable angle prism (VAP) also shown in figures 8 and 9 is driven on the basis of the vibration signal).

Regarding **claim 8,** Morofuji teaches a storage medium, readable by an information processing apparatus (column 27 lines 9 *et seq.*), storing a program including program codes capable of realizing the vibration compensation method (column 27 lines 9 *et seq.*) according to: an angular velocity detector which detects angular velocities in the vibration detection axes directions, the vibration detection axes being two orthogonal detection axes (figure 1, item 1 for yaw (i.e. x direction) and item 1' for pitch (i.e. y direction)), and outputs angular velocity signals (figure 1 items 1 and 1' outputting to items 2 and 2' i.e. HPF's), and a compensation unit which compensates vibration in vibration compensation axes directions (figure 8 and also figure 9 item 106 in directions of item numbers 140 and 117), the vibration compensation axes being orthogonal axes, comprising: converting the angular velocity signals expressed in the vibration axes directions obtained by said angular velocity detector **or** vibration compensation signals based on the angular velocity signals into angular velocity signals **or** vibration compensation signals expressed in the vibration compensation axes directions (figure 1 items 203 and 203', figure 3, abstract, and column 5 lines 17 *et seq.*; integration unit 203 integrates angular velocity signal and converts the angular velocity signal into an angular displacement signal to generate a vibration signal, a variable angle prism (VAP) also shown in figures 8 and 9 is driven on the basis of the

vibration signal); and compensating the vibration by controlling the compensation unit based on the converted angular velocity signals **or** vibration compensation signals (figure 1 items 203 and 203', figure 3, abstract, and column 5 lines 17 *et seq.*; integration unit 203 integrates angular velocity signal and converts the angular velocity signal into an angular displacement signal to generate a vibration signal, a variable angle prism (VAP) also shown in figures 8 and 9 is driven on the basis of the vibration signal), the program being executable by the information processing apparatus (column 27 lines 9 *et seq.*).

Allowable Subject Matter

Claim 2 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter for **claim 2**: The vibration compensation apparatus according to claim 1, wherein, **let the angular velocity signals expressed in the vibration detection axes direction or compensation signals based on the angular velocity signals be x, y, an angle made by the vibration detection axes and the vibration compensation axes be .theta., and the converted signals be X and Y, then said conversion unit performs the following operations: X=x cos .theta.-y sin .theta. Y=y cos .theta.+x sin .theta.** is not discussed or suggested in any of the prior art that was searched.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Usman Khan whose telephone number is (571) 270-1131. The examiner can normally be reached on Mon-Thru 6:45-4:15; Fri 6:45-3:15 or Alt. Fri off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Ometz can be reached on (571) 272-7593. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Usman Khan/

/David L. Ometz/
Supervisory Patent Examiner, Art Unit 2622

Usman Khan
03/16/2008
Patent Examiner
Art Unit 2622